

REMARKS

This amendment is responsive to an Office Action mailed March 1, 2006 ("the Office Action").

The Office Action rejected Claims 1-4, 6-12, 14, and 15 under 35 U.S.C. § 103(a). The Office Action rejected Claims 1, 2, 6-8, 10, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Woods et al., U.S. Patent Application Publication No. 2002/0162037 ("Woods"), in view of the applicants' admitted prior art disclosure in the application, pages 1-6 ("APA"), and further in view of Purdham, U.S. Patent No. 5,701,313 ("Purdham"). The Office Action rejected Claims 3, 9, and 11 under 35 U.S.C. § 103(a) as being unpatentable over Woods et al. in view of the APA, and in view of Purdham, and further in view of Freeman et al., U.S. Patent No. 6,510,528 ("Freeman"). The Office Action also rejected Claims 4 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Woods et al. in view of the APA, and in view of Purdham, and further in view of Smith III, U.S. Patent No. 5,502,728 ("Smith III"). The Office Action objected to Claims 5 and 13 as being dependent upon a rejected base claim. The Office Action stated that Claims 5 and 13 would be allowable if rewritten in independent form. The Examiner is thanked for allowing Claims 5 and 13.

Claims 1-7 and 15 have been canceled without prejudice. Claims 8-14 have been amended to further clarify claim language.

Applicants have carefully considered each of the cited references and the remarks made in the Office Action and submit that the amended claims presented above are in patentable condition. Reconsideration of the application and allowance of the claims at an early date is respectfully requested.

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Rejection of Claims 1, 2, 6-8, 10, 14, and 15 Under 35 U.S.C. § 103(a)

As noted above, Claims 1-7 and 15 have been canceled without prejudice, thus, rendering the rejection moot.

As noted above, Claim 8 has been amended and rewritten in independent form. Amended independent Claim 8 recites, *inter alia*, "a shift register connected to the scan chain, wherein the shift register stores the save data output from the functional module" (emphasis added). Woods does not teach or suggest a shift register connected to the scan shift wherein the shift register stores the save data output from the functional module. Woods discloses a memory unit 270 for use in storing state information (§ 0057). Woods further discloses that "the memory 270 is preferably a nonvolatile memory (e.g., an EEPROM) so that the information stored therein is retained during periods of inactivity." Woods further discloses that the memory 270 can be a volatile memory (e.g., a random access memory (RAM)). (emphasis added; § 0057.) Woods further discloses that in state D_5, the ISPRFSM 260 checks the address counter against a value . . . the address counter reaches when all the data in the FFs has been stored in the RAM (§ 0084). Those skilled in the art will appreciate that an address counter, RAM, and EEPROM are memory components used in memory modules that include randomly addressable binary words and wherein data is read and written in parallel (i.e., multiple bits at a time). This is in contrast to the shift register, which is a serially accessed memory component, as recited in amended independent Claim 8. Those skilled in the art appreciate that the shift operation is inherently a serial bit transfer operation.

Amended independent Claim 8 recites, *inter alia*, "a clock signal generator which generates a saving clock signal and restoration clock signal for the functional module selected by the power supply control unit" (emphasis added). Woods does not teach or suggest two distinct clock signals, namely, a saving clock signal and a restoration clock signal, for saving and

restoring data to/from the functional module, respectively. Woods discloses that the "scan control signals can include a scan clock signal and a test mode signal" (emphasis added; ¶ 0056).

Amended independent Claim 8 recites, *inter alia*, "an error checking and correction unit which performs error checking and correction for the save data stored in the shift register when the save data is to be restored to the flip-flops of the functional module by the shift operation using the scan chain synchronized with the restoration clock signal." Woods does not teach or suggest error checking and correction ("ECC"). The APA and Purdham fail to supply the teachings missing from Woods. The APA indicates the use of high voltages on memory modules as a means of preventing occurrence of soft errors (pp. 5-6). The APA does not teach or suggest the use of ECC. Purdham discloses the use of ECC on parallel, word addressable, multi-bit memory performed one or more words at a time, in contrast to ECC performed when the save data is to be restored by the shift operation using the scan chain, as recited by Claim 8. Therefore, applicants submit that amended Claim 8 is allowable for at least the reasons presented above.

Rejection of Claims 3, 9, and 11 Under 35 U.S.C. § 103(a)

As noted above, Claim 3 has been canceled without prejudice, thus rendering the rejection moot. Claims 9 and 11 depend from Claim 8 and are submitted to be allowable for at least the same reasons presented above with respect to Claim 8.

Rejection of Claims 4 and 12 Under 35 U.S.C. § 103(a)

As noted above, Claim 4 has been canceled without prejudice, thus rendering the rejection moot. Claim 12 depends from Claim 8 and is submitted to be allowable at least for the same reasons presented above with respect to Claim 8.

Objection to Claims 5 and 13

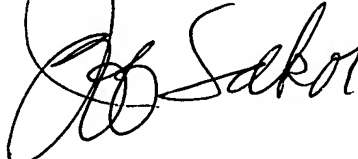
As noted above, Claim 5 has been canceled without prejudice, thus rendering the rejection moot. Claim 13 depends from Claim 8 and is submitted to be allowable for at least the same reasons presented above with respect to Claim 8.

CONCLUSION

For the reasons set forth above, applicants respectfully submit that all of the rejection claims remaining in this application are clearly allowable in view of the cited and applied references. As a result, early and favorable action allowing these claims and passing this application to issue are respectfully solicited.

Respectfully submitted,

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Date:

August 1, 2006

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